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ANDALUSITE, SILLIMANITE (FIBROLITE), CYANITE AND CORUNDUM FROM QUARTZ VEINS OF THE SOUTH URALS

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[A digest]

According to the geologist B. M. Pobedonostsev, fine andalusite crystals in quartz veins embedded in quartz-micaceous schists occur near the village of Mikhaylovka in Kochkarsk Rayon in the South Urals. Geologist P. G. Sharmanov encountered crude andalusite crystals and fibrous Sillimanite aggregates in great quantities 10 to 15 kilometers south of Mikhaylovka in the quartz veins of the Svetlinsk mines. Other geologists have found corundum with andalusite and sillimanite and have even observed cyanite in vein outcropings, according to field observations and studies of Sharmanov's collections. Now we can consider quartz veins with smoky rock crystal pockets and embedded in the exo-contact zone of the Kochkarsk granite massif among quartz-micaceous schists as aluminum-rich Alpine-type veins, which is unusual in mineral paragenesis.

The Svetlinsk quartz veins are lenticular and complex; their strike is meridional and conformable with the schistosity of surrounding rocks; dip is opposite to quartz-micaceous schists; intersection angle between veins and rocks is 60-85 degrees; vein walls are irregular, with acute-angle rock boundaries included in the vein quartz; length varies widely; the quartz beds are full of fissures. As for the crystallographic description, the vein quartz is large-grained, vitreous, semitransparent, milky-white, granular, translucent on the edges, turbid due to gas and fluid inclusions, etc.

Considerable quantities of andalusite veins are located near the Kosarevsk settlement, near a triangulation base-point; the crystals reach 20 centimeters in length and 6 centimeters in diameter, but are seldom well preserved and are always included in quartz.

Sillimanite is found in the same location as andalusite. Sillimanite veins are concentrated around casings and fuzed with the wall rocks.

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Cyanite was found in the vein outcroppings, as parallel columnar aggregates; crystals are plano-prismatic with a length reaching 5 centimeters. Cyanite if found with considerable muscovite, filling the interstices between the cyanite crystals.

Fine corundem crystals are found in the root part of coarse andalusite crystals and are columnar, 3 millimeters long and 1 millimeter wide; color is blue.

Biotite ensiform crystals found in the Svetlinsk quartz deposits are 10-15 centimeters long, 1 centimeter wide, and 3-4 millimeters thick.

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